



Section C. 47' MLB Basic Engineering Casualty Control Exercises

Introduction This Section provides a list of the standard engineering casualty control drills for the 47' MLB that will be administered by evaluation teams assigned to the Boat Readiness and Standardization Program.

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**Exercise: Fire in the Engine Room****Score** SAT / UNSAT
Unit Name _____ **Boat #** _____ **Date** _____

Coxswain _____ **Engineer** _____

Crewmember _____ **Crewmember** _____

Weather During Drill: **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____
References

- a. *47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- b. *Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- c. *Naval Engineering Manual*, COMDTINST M9000.6 (series)
- d. *Rescue and Survival Systems Manual*, COMDTINST M10470.10 (series)

Terminal Performance Objective

After smoke/heat from a fire in the engine room sets off the alarm, identify the cause, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB, with a certified crew operating within prescribed limitations, the fire alarm sounds and smoke/flames are visible through the engine room port light.

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to neutral. (P)			
b. Notify crew of casualty. (T)			
c. Engineer check engine room through engine room port light to assess situation. (P)			
d. Coxswain secure both engines with engine stops at steering station. (P)			
e. Engineer pull emergency fuel stops in survivors compartment with coxswain concurrence. (P/T)			
f. Engineer energize CO ₂ system by releasing lock pin and depressing handle, or by pulling ring locally at CO ₂ bottle. (P/O)			
g. Crew member secure shutoff valves for both engine room air inlets located within aft buoyancy chamber. (P)			
h. Coxswain account for all persons onboard. (P/T)			
i. Contact and inform Station of situation and current position. (P/N)			
j. Engineer secure nonessential electrical power at DC panels (all except VHF/FM radio) with coxswain concurrence. (P/T)			
k. Crewmember rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
l. Coxswain discuss relocation of P-5 portable pump forward, away from engine space, for emergency use. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
m. Establish fire watch, with portable fire extinguisher readied in survivors compartment to monitor by observing through engine room port light only. (P)			
n. Coxswain coordinate with Station for tow or other assistance emphasizing crew safety. (P/T)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			
CAUTION! It is extremely dangerous to enter a compartment during or after a fire without an OBA or other breathing apparatus. The MLB should be towed back to the station. The compartment must be properly ventilated and the space tested for oxygen level before entering.			

**Exercise: Loss of Steering (Hydraulics)****Score** SAT / UNSAT**Unit Name** _____ **Boat #** _____ **Date** _____**Coxswain** _____ **Engineer** _____**Crewmember** _____ **Crewmember** _____**Weather During Drill:** **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____**References**

- a. *47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- b. *Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- c. *Naval Engineering Manual*, COMDTINST M9000.6 (series)
- d. *Rescue and Survival Systems Manual*, COMDTINST M10470.10 (series)

Terminal Performance Objective

After loss of helm (steering) control, identify the cause, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the helmsman reports the helm turns in either direction with no rudder response (caused by a failure within the hydraulic system). The sounding of the low steering pressure alarm follows this symptom.

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to clutch ahead. (P)			
b. Secure both engines when low steering pressure alarm on console sounds. (P)			
c. Notify crew of casualty. (P)			
d. Verify current position and evaluate situation. (P/T/N)			
e. Crew members rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
f. Engineer check engine room through engine room port light to assess the situation. (P)			
g. Engineer enter engine room with crew member as a safety observer. (T)			
h. Check bilges and look for obvious leaks. (P)			
i. Check gauge on reservoir for pressure, if no hydraulic oil or pressure, both engines remain secured. (P)			
j. Check remainder of steering system from steering rams in lazarette to helm station on open bridge. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
k. Coxswain coordinate with Station for tow or other assistance when risk assessment indicates crew or vessel safety will be jeopardized through continued operation. (P/T)			
l. Engineer discuss option of removing the sun gear from “both” hydraulic pumps before restarting engines. (P)			
m. Coxswain discuss option of removing hydraulic pump sun gears in order to gain use of engines for maneuvering. (P)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other’s location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

**Exercise: Loss of Steering (Electrical)****Score** SAT / UNSAT

Unit Name _____	Boat # _____	Date _____
Coxswain _____	Engineer _____	
Crewmember _____	Crewmember _____	
Weather During Drill:	Winds _____	Seas _____
	Current _____	Visibility _____

References

- a. *47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- b. *Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- c. *Naval Engineering Manual*, COMDTINST M9000.6 (series)
- d. *Rescue and Survival Systems Manual*, COMDTINST M10470.10 (series)

Terminal Performance Objective

After loss of helm (steering) control at one of the jog levers or the autopilot, identify the cause, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the helmsman reports: Scenario (1) a jog lever has no rudder response or is not responding correctly, Scenario (2) the autopilot is controlling vessel steering but is not responding correctly. No low steering pressure alarm accompanies this symptom. When checked, the hydraulic portion of the steering system is intact, full, and has the proper head pressure.

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to clutch ahead. (P)			
b. Notify crew of casualty. (T)			
c. Scenario (1) Attempt to select steering station, reactivate jog lever control. Check to ensure autopilot disengaged. Scenario (2) Check autopilot select button. Determine what function the autopilot is in (auto/nav/power sys). (P)			
d. Shift steering control to hydraulic helm. Bring engines to neutral if electro-hydraulic side of the steering system continues to effect hydraulic helm control. Establish vessel control and maneuver vessel to safe waters. (P)			
e. Verify current position and evaluate situation. (P/T/N)			
f. Check all steering stations to isolate extent of the steering problem. (P)			
g. Crew members rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
h. Engineer check engine room through engine room port light to assess the situation. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
i. Engineer enter engine room with crew member as a safety observer. (T)			
j. Check bilges and look for obvious leaks. (P)			
k. Check gauge on reservoir for pressure, if no hydraulic oil or pressure, secured both engines. (P)			
l. Check electrical connections at electro-hydraulic steering valve (steering control solenoid actuator). (P)			
m. Check power servo cylinder (steering ram) connections and autopilot rudder angle indicator connections in lazarette. (P)			
n. Check steering system breakers in auxiliary machinery compartment. (P)			
o. Secure steering control breaker if faulty jog lever continues to interfere with hydraulic helm. Secure autopilot breaker if autopilot continues to interfere with hydraulic helm. (P)			
p. Coxswain coordinate with Station for tow or other assistance when risk assessment indicates crew or vessel safety will be jeopardized through continued operation. (P/T)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

**Exercise: Collision With Submerged Object (or Bottom)****Score** SAT / UNSAT**Unit Name** _____ **Boat #** _____ **Date** _____**Coxswain** _____ **Engineer** _____**Crewmember** _____ **Crewmember** _____**Weather During Drill:** **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____**References**

- a. *47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- b. *Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- c. *Naval Engineering Manual*, COMDTINST M9000.6 (series)
- d. *Rescue and Survival Systems Manual*, COMDTINST M 10470.10 (series)

Terminal Performance Objective

After striking a submerged object (or bottom), assess resulting damage, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the MLB hits a submerged object or momentarily goes aground.

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to neutral (when in safe waters and out of surf zone). (P)			
b. Notify crew of casualty. (T)			
c. Determine what was hit, where the object is located and if it can still be seen. (P)			
d. Verify current position and depth of water and evaluate situation. (N/P/T)			
e. Engineer check gear space and shafting for obvious flooding or damage. (P)			
f. Engineer check engine room through engine room port light to assess obvious flooding or damage. (P)			
g. Engineer enter engine room with crew member as safety observer. (P/T)			
h. Engineer check engine room bilges for flooding or obvious damage (particularly around the strut mounting points). (P)			
i. Engineer check lazarette bilges for flooding, rudder or steering system damage. (P)			
j. Engineer check for proper cooling water circulation or debris in the strainers. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
k. Crew member check auxiliary and forward compartment bilges for flooding or obvious damage. Assess situation by making observation through door port lights before entering the compartments. (P)			
l. Crew member check forepeak void for flooding by removing drain plug at bulkhead 15. (P)			
m. Coxswain conduct steering checks including helm and jog lever control to identify limitations or isolate areas of damage. (P)			
n. Coxswain engage engines and reduction gears individually at various speeds while engineer check for vibration and assess damage to propulsion system. (P)			
o. Return to Station at reduced speed or on one engine, if warranted, to prevent additional damage or vibration. (P)			
p. Coxswain coordinate with Station for tow or other assistance when risk assessment indicates crew or vessel safety will be jeopardized through continued operation. (P/T)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

**Exercise: Hard Grounding****Score** SAT / UNSAT**Unit Name** _____ **Boat #** _____ **Date** _____**Coxswain** _____ **Engineer** _____**Crewmember** _____ **Crewmember** _____**Weather During Drill:** **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____**References**

- a. *47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- b. *Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- c. *Naval Engineering Manual*, COMDTINST M9000.6 (series)
- d. *Rescue and Survival Systems Manual*, COMDTINST M10470.10 (series)

Terminal Performance Objective

After going hard aground, assess resulting damage, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB, with a certified crew operating within prescribed limitations, the MLB hits bottom and becomes hard aground (unable to initially float free).

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to neutral. (P)			
b. Notify crew of casualty. Assess condition of crew. (T)			
c. Verify current position and depth of water and evaluate situation. (N/P/T)			
d. Notify Station of position and make follow-ups as situation is clarified. (P)			
e. Engineer check gear space and shaft seals for obvious flooding or damage. (P)			
f. Engineer check engine room through engine room port light to assess obvious flooding or damage. (P)			
g. Engineer enter engine room with crew member as safety observer. (P/T)			
h. Engineer check engine room bilges for flooding or obvious damage (particularly around the strut mounting points). (P)			
i. Engineer check lazarette for any signs of flooding, rudder or steering system damage. (P)			
j. Engineer check for proper cooling water circulation or debris in strainers. Secure engines if cooling is inadequate or if excessive debris (especially sand) is observed. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
k. Crew member check auxiliary and forward compartment bilges for flooding or obvious damage. Assess situation by making observation through door port lights before entering the compartments. (P)			
l. Crew member check forepeak void for flooding by removing drain plug at bulkhead 15. (P)			
m. Crew members rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
n. Crew members take depth soundings all around vessel. Coxswain determine deepest water, extent of grounding, and potential for underwater damage. (P)			
o. Consider present and future state of tide, current, or other weather conditions with regard to re-floating or salvage options. (P)			
p. Deploy anchor if situation involves potential for being set further aground due to conditions. (P/O)			
q. Coxswain determine safest direction to deep water and method for extricating vessel safely and with least damage. (P/T)			
r. Conduct check of propulsion system integrity prior to attempting re-floating or salvage. Take caution to reduce further damage. (P/T)			
s. Conduct check of steering system integrity. Check rudder travel or limitations utilizing hydraulic helm (not jog levers). Take caution to reduce further damage. (P/T)			
t. Coxswain maneuver into safe waters (deep enough for MLB and out of surf zone) using only engines, if damage to steering system occurred. (P/B)			
u. Coxswain conduct steering check including helm and jog lever control to identify limitations or isolate areas of damage. (P)			
v. Coxswain engage engines and reduction gears individually at various speeds while engineer checks for vibration and assesses damage to propulsion system. (P/T)			
w. Return to Station or appropriate haul-out at reduced speed or on one engine, if warranted, to prevent additional damage or vibration. (P/O/B)			
x. Coxswain coordinate with Station for tow or other assistance when risk assessment indicates crew or vessel safety will be jeopardized through continued operation. (P/T)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed of during evolution. (P/T)			

Exercise: Loss of Main Engine Lube Oil Pressure**Score** SAT / UNSAT

Unit Name _____ **Boat #** _____ **Date** _____
Coxswain _____ **Engineer** _____
Crewmember _____ **Crewmember** _____
Weather During Drill: **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____

References

- 47' MLB Operator's Handbook, COMDTINST M16114.25 (series)
- Boat Crew Seamanship Manual, COMDTINST M16114.5 (series)
- Naval Engineering Manual, COMDTINST M9000.6 (series)
- Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)

Terminal Performance Objective

After loss of lube oil pressure in one main diesel engine, identify the cause, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the EDM alarm sounds and indicates "Code 45" (oil pressure low).

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to clutch ahead. (P)			
b. Identify affected engine. (P)			
c. Notify crew of casualty. (T)			
d. Secure affected engine. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
e. Verify current position and evaluate situation. (P/T/N)			
f. Crew members rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
g. Engineer check engine room through engine room port light to assess the situation. (P)			
h. Engineer enter engine room with crew member as safety observer. (P/T)			
i. Check bilge area for lube oil. (P)			
j. Check obvious lube oil leaks. (P)			
k. Check lube oil for quality and quantity. (P)			
l. Identify and correct source of problem or, (P/T)			
m. Return to Station on one engine as necessary if cause cannot be determined or repaired. (P/T)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			


**Exercise: Main Engine High Water Temperature****Score** SAT / UNSAT

Unit Name _____	Boat # _____	Date _____
Coxswain _____	Engineer _____	
Crewmember _____	Crewmember _____	
Weather During Drill:	Winds _____	Seas _____
	Current _____	Visibility _____

References	<ul style="list-style-type: none"> a. <i>47' MLB Operator's Handbook</i>, COMDTINST M16114.25 (series) b. <i>Boat Crew Seamanship Manual</i>, COMDTINST M16114.5 (series) c. <i>Naval Engineering Manual</i>, COMDTINST M9000.6 (series) d. <i>Rescue and Survival Systems Manual</i>, COMDTINST M10470.10 (series)
Terminal Performance Objective	After rising operating temperature of one main diesel engine sets off the alarm, identify the cause, prevent further damage, and take corrective actions.
Conditions	While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the EDM sounds an alarm and indicates "Code 44" (coolant temperature high).
Standards	In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to clutch ahead. (P)			
b. Identify affected engine. (P)			
c. Notify crew of casualty. (T)			
d. Verify current position and evaluate situation. (P/T/N)			
e. Coxswain secure engine if temperature is above 212 °F or if engineer reports steam is present. (P)			
f. Engineer check engine room through engine room port light to assess situation. (P)			
g. Engineer enter engine room with crew member as safety observer. (P/T)			
h. Engineer check engine temperature as indicated on mechanical gauge. (P)			
i. Check bilges and engine for obvious leaks. (P)			
j. Feel brass pipe to determine which system the casualty is in. (P)			
k. If the pipe is hot:			
(1) Check sea suction valve. (P)			
(2) Check and shift duplex strainer. (P)			
(3) Check R/W pump cover with back of hand. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
(4) Ensure deicing system is closed. (P)			
1. If the pipe is cool:			
(1) Check J/W level on coolant recovery bottle. (P)			
(2) Check weep hole of J/W pump. (P)			
(3) Check L/O for quality and quantity. (P)			
NOTE  Even if pipe is cool, components of the R/W system may still be malfunctioning (i.e. partially clogged strainers or missing vanes on impeller).			
m. Identify and correct source of problem or, (P/T)			
n. Secure affected engine and return MLB to Station if cause cannot be determined or repaired. (P/T)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

**Exercise: Reduction Gear Failure****Score** SAT / UNSAT**Unit Name** _____ **Boat #** _____ **Date** _____**Coxswain** _____ **Engineer** _____**Crewmember** _____ **Crewmember** _____**Weather During Drill:** **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____**References**

- a. *47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- b. *Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- c. *Naval Engineering Manual*, COMDTINST M9000.6 (series)
- d. *Rescue and Survival Systems Manual*, COMDTINST M10470.10 (series)

Terminal Performance Objective

After one reduction gear would not respond to DDEC throttle station control, identify the cause, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB, with a certified crew operating within prescribed limitations, one of the reduction gears does not respond properly when the throttles are operated in forward and reverse.

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Bring both throttles to neutral. (P)			
b. Notify crew of casualty. (T)			
c. Verify current position and evaluate situation. (N/P/T)			
d. Coxswain check EDM for R/G pressure and secure engine if pressure is not within parameters. (P)			
e. Ensure active light is lit at control station. (P)			
f. Coxswain attempt to regain R/G control by changing to another throttle station or engaging backup control panel. (P)			
g. Coxswain secure effected engine. (P)			
h. Crew members rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
i. Engineer check both Gear Interface Module breakers on 24V power panel. (P)			
j. Engineer remove deck plates over affected R/G. (P)			
k. Check gear space bilge area for oil. (P)			
l. Check R/G lube oil level. (P)			
m. Check R/G control valve electrical connections. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
n. Engineer check dirty oil filter indicator on duplex filter, if indicator has popped up, handle is shifted to other filter. (P)			
o. If no leaks are present and oil level is full, restart engine and check clutch application pressure (230 to 290 PSI) when engaged. (P)			
p. Secure engine if pressure is not within parameters. (P)			
q. After all mechanical checks have been made, proceed to troubleshoot electronic controls (ECs). (P)			
r. Manually operate control valve if failure of the electronic control was determined. (P)			
s. Discuss use of R/G “Come Home” device if a long distance must be traveled during return to the unit. (P/B)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other’s location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

**Exercise: Loss of Fuel Oil Pressure****Score** SAT / UNSAT

Unit Name _____	Boat # _____	Date _____
Coxswain _____	Engineer _____	
Crewmember _____	Crewmember _____	
Weather During Drill:	Winds _____	Seas _____
	Current _____	Visibility _____

References	a. <i>47' MLB Operator's Handbook</i> , COMDTINST M16114.25 (series) b. <i>Boat Crew Seamanship Manual</i> , COMDTINST M16114.5 (series) c. <i>Naval Engineering Manual</i> , COMDTINST M9000.6 (series) d. <i>Rescue & Survival Systems Manual</i> , COMDTINST M10470.10 (series)
Terminal Performance Objective	After experiencing a loss in RPMs on one engine, identify the cause, prevent further damage, and take corrective actions.
Conditions	While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, one engine begins to run rough and lose power while the EDM sounds an alarm and indicates "Code 48" (fuel pressure low).
Standards	In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to clutch ahead. (P)			
b. Identify and secure affected engine. (P)			
c. Notify crew of casualty. (T)			
d. Verify current position and evaluate situation. (N/P/T)			
e. Crew member rig the anchor for emergency use (fairlead line but anchor remains in bracket), if directed by coxswain. (P/O)			
f. Engineer check engine room through engine room port light to assess situation. (P)			
g. Engineer enter engine room with crew member as safety observer. (P/T)			
h. Check engine room bilge for fuel oil. (P)			
i. Check emergency fuel cutout valves to ensure they are open. (P)			
j. Check primary fuel filters. (P)			
k. Check entire fuel oil system for leaks. (P)			
l. Identify and correct source of problem or request additional assistance from Station . (P/T)			
m. Coxswain maneuver MLB safely using only one engine. (B)			
2. Crew Teamwork and Coordination:			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

Exercise: Loss of Control of Engine RPM
Score SAT / UNSAT

Unit Name _____ **Boat #** _____ **Date** _____

Coxswain _____ **Engineer** _____

Crewmember _____ **Crewmember** _____

Weather During Drill: **Winds** _____ **Seas** _____ **Current** _____ **Visibility** _____

References

- 47' MLB Operator's Handbook, COMDTINST M16114.25 (series)
- Boat Crew Seamanship Manual, COMDTINST M16114.5 (series)
- Naval Engineering Manual, COMDTINST M9000.6 (series)
- Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)

Terminal Performance Objective

After one engine fails to respond properly to DDEC throttle station control, identify the cause, prevent further damage, and take corrective actions.

Conditions

While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the coxswain attempts to reduce speed but one engine stays at set RPM and does not respond to DDEC throttle control.

Standards

In accordance with procedures set forth in the above references.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Place both throttle control levers in clutch ahead position. (P)			
b. Notify crew of casualty. (T)			
c. Coxswain ensure throttle station is active and synch function is off. (P)			
d. Coxswain shift to another station and attempt to gain throttle control. (P)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
e. Use emergency backup panel to gain engine control after checking other throttle stations. (P)			
f. Use engine stop button (push and hold down) to secure effected engine. (P)			
g. If engine fails to secure, engineer proceed to survivor's compartment and pull emergency fuel cutoff for affected engine. (P)			
h. Coxswain use emergency air shutdown if engine still fails to secure. (P)			
i. Coxswain maneuver MLB safely back to moorings on one engine. (P/B)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout the evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed during evolution. (P/T)			

Exercise: **Low Voltage Alarm/Loss of Electrical Charging System**

Score SAT / UNSAT

Unit Name _____

Boat # _____

Date _____

Coxswain _____

Engineer _____

Crewmember _____

Crewmember _____

Weather During Drill: Winds _____

Seas _____

Current _____

Visibility _____

References

- 47' MLB Operator's Handbook*, COMDTINST M16114.25 (series)
- Boat Crew Seamanship Manual*, COMDTINST M16114.5 (series)
- Naval Engineering Manual*, COMDTINST M9000.6 (series)
- Rescue and Survival Systems Manual*, COMDTINST M10470.10 (series)

Terminal Performance Objective

After recognizing a low voltage alarm or symptoms of problems with the 24-VDC charging system, identify the cause, prevent further damage, and take corrective actions.



Conditions

While underway on a 47' MLB at cruising speed, with a certified crew operating within prescribed limitations, the engineer/crew member reports: Scenario (1) a low voltage alarm (Code 46 ECM battery low) is displayed on the Electronic Display Module (EDM), Scenario (2) a significant drop-in voltage is indicated by dimming lights, electronics dropping off line, and/or DDEC III station control is deactivated. A low voltage alarm may/may not accompany Scenario (2).

Standards

In accordance with procedures set forth in the above reference.

ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
1. Casualty:			
a. Reduce RPMs of both engines to clutch ahead. (P)			
b. Notify crew of casualty. (P)			
c. Engineer check position of battery isolator switches located in the survivor's compartment. (T)			
d. Engineer check engine room through engine room port light to assess the situation. (P)			
e. Engineer enter engine room with crew member as a safety observer. (T)			
f. Check both alternator/regulator reset switches (starboard engine room bulkhead). (P)			
g. Check condition of starboard alternator belts for slippage, damage, or missing. Renew belts with onboard spares, as needed. (P)			
h. Check electrical connections at starboard alternator. (P)			
i. Check electrical connections at lube oil pressure switch. (P)			
j. Repeat checks above for port engine. (P)			
k. Check fuse in 24-volt start panel (port engine room bulkhead). (P)			
l. Engineer check all main battery connections in auxiliary machinery compartment (service pair forward, starting pair aft). Tighten and clean as necessary. (T)			
m. Engineer secure all non-vital equipment at the 24-volt DC power supply panel. (P)			
n. Engineer secure all non-vital equipment at the 12-volt DC power supply panel. (P)			
o. Engineer place start and service batteries in parallel. (P)			
p. Engineer determine extent of electrical power loss, probable cause, and expected service duration for platform. Crew discuss impact on mission. (T)			



ENABLING OBJECTIVES	SAT	UNSAT	REMARKS
q. Coxswain establish secondary communications with Station (handheld portable VHF radio) in case primary power is lost. (P)			
r. Coxswain coordinate with Station for tow or other assistance when risk assessment indicates crew or vessel safety will be jeopardized through continued operation. (P/T)			
2. Crew Teamwork and Coordination:			
a. Coxswain brief crew of specific job and mission responsibilities. (T)			
b. Crew communicate effectively and assertively during evolution. (T)			
c. Crew assist each other as needed. (T/P)			
d. Crew always aware of other's location. (T)			
e. Coxswain provide appropriate and timely guidance throughout evolution. (T)			
f. Wear and use crew safety and survival equipment properly. (P/T/O)			
g. Do not jeopardize safety of vessel and crew. (T)			
h. Coxswain keep Station informed of during evolution. (P/T)			